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NOTES AND NEWS.

DR. C. A. J. A. OUDEMANS has resigned the professorship of botany in the University of Amsterdam, on account of his advanced age.

THE *Icones Plantarum* is hereafter to be edited by the Director of Kew Gardens, a duty performed since 1891 by Professor Daniel Oliver.

DR. J. MUELLER, Director of the Botanic Garden and Curator of the Delessert Herbarium at Geneva, died January 28th in his 68th year.

MR. L. S. CHENEY, instructor in botany in the University of Wisconsin, has been promoted to be assistant professor of botany in the college of pharmacy.

THERE WERE more than 1,400,000 visitors at the Kew Gardens during 1895. The month of largest attendance was June, with nearly 300,000, and the smallest February, with little over 12,000.

THE NEW Mexican *Lippia iodantha* Rob. & Greenm. is figured in *Garden and Forest* for March 11th, with a brief informal description in "Notes of Mexican Travel" by C. G. Pringle.

A POPULAR ARTICLE on ferns by Willard N. Clute, profusely illustrated, and unusually well written, appears in the *Commercial Travelers' Home Magazine* for March (**6**: 271–278.)

PROF. D. T. MACDOUGAL, of the University of Minnesota, expects to spend the summer in Tübingen, in the laboratory of Prof. Vöchting, where he may be addressed during June, July and August.

E. KNOBLAUCH (*Ber. Deutsch. Bot. Gesell.* **13**: 289) announces the discovery of heterostylous flowers in several genera of *Gentianaceæ* notably *Hockinia*. This dimorphism is plainly correlated with the visits of insects.

ANOTHER PARASITE producing scab on potato tuber has been found in Hungary by K. Schilberscky (Ber. d. d. bot. Ges. **14**: 36–37). It belongs to the Chytridineæ, and is named by the discoverer, Chrysophlyctis endobiotica.

INTERESTING ACCOUNTS of the difficulties and pleasures met with in searching for the rare fern, *Schizæa pusilla*, are given in the April number of the *Linnæan Fern Bulletin*, by Mrs. Elizabeth G. Britton and Mr. C. F. Saunders.

DR. RODNEY H. TRUE has been promoted from instructor to assistant professor of pharmacognosy in the University of Wisconsin. Dr. True's thorough training in botany will enable him to give his students a genuine scientific background for their practical work.

MR. O. F. COOK, who made his third trip to Africa last October, is expected to land in New York about the middle of April. He spent less than three months in Liberia this trip, but reports a successful journey and large collections as usual. He returns via Hamburg and will spend some time in the Berlin museum before his return.

MESSRS. D. T. MacDougal of the University of Minnesota, Geo. J. Peirce of the State University of Indiana and R. A. Harper of Lake Forest University have recently been elected to membership in the Deutsche Botanische Gesellschaft.

WEED LEGISLATION in the United States has been summarized by L. H. Dewey in a very complete manner (Bull. U. S. Dept. Agric., Div. Bot., no. 17, 1896, pp. 60). The work must prove of much service to those who are interested in securing the assistance of the law in the fight against weeds.

THE RUSSIAN thistle is the subject of a bulletin by E. O. Wooton (N. M., no. 16). A general account is given. It was introduced into New Mexico in 1894 at Santa Fe. A revised edition of the circular on the Russian thistle by L. H. Dewey has been sent out by the U. S. Department of Agriculture.

THE ABRASION of tree trunks by snow and sleet driven by the wind was observed by Mr. P. M. Van Epps (*Science* **3**: 442) in a forest in New York. The bark was worn away on the westward side to the height of three or four feet above the surface of the snow, the freshly exposed surfaces giving a conspicuous dull yellow color.

AFTER A critical study of the ligule of Selaginella, Prof. H. Gibson, of University College, Liverpool, decides that the ligule is a specialized ramentum, and bases his conclusions on the very early development of the ligule in the history of the leaf, and the provision for a water supply for the ligule by the arrangement of the vascular bundle. (*Ann. Bot.* March.)—S. C. S.

IN COMMENTING upon Prof. Farlow's article in a recent number of this journal (**20**: 547) on the mimicry of parasitic fungi in insects, Dr. René Ferry (*Rev. Mycol.* **78**: 67) suggests that while insects which mimic healthy leaves receive protection from insect eating foes, those which mimic diseased leaves have an added protection from the incidental injury by leaf-eating enemies.

DR. CORRENS of Tübingen announces his discovery of irritability of tendrils to changes in temperature in the *Botanische Zeitung* for Jan. 16th. This fact, however, was discovered by Prof. D. T. Mac Dougal in the laboratory for plant physiology of Purdue University in November, 1892, and published in this journal (**18**: 125. 1893) together with some results on the chemical irritability of these organs—evidently unknown to Dr. Correns.

AMONG the new African plants discovered by Dr. A. Donaldson Smith are two new genera, *Donaldsonia* Baker, said to suggest technically Pittosporeæ, also showing affinity with Passifloreæ, but not assigned to any family by the author; and *Gillettia* Rendle, belonging to the Commelinaceæ. Both are described and illustrated in *Journ. Bot.* (Feb.). *Baseonema* Schlechter & Rendle is another new African genus, belonging to the Asclepiadaceæ, described and figured in *Journ. Bot.* (March).

SOME interesting records of experiments showing the action of acid potassic oxalate on Elodea and Oxalis, with regard to its effect on the changing of starch to sugar, are given in the March number of the *Annals of Botany*. It is found that a lack of calcium as a counteractant, allows the acid potassic oxalate to prevent the change of starch to sugar, and thus to deprive the plant of all the carbon present in a starch-condition, although the conduction of the other carbohydrates is not interfered with.—S. C. S.

IN AN ILLUSTRATED article in the *Tokyo Bot. Magazine* (**10**: 16–20) Prof. Y. Takahashi shows the identity of *Tilletia oryzæ* Pat. with *Ustilago virens* Cke, a fungus that has recently been demonstrated by Brefeld[1] to be one of the *fungi imperfecti*, and not one of the Ustilagineæ. A new species of Tilletia, *T. horrida*, is described, so far the only genuine Ustilaginea found on Oryza sativa. It is notable for the very long acute spines of the epispore.

BOWER continues his "Studies in the morphology of spore-producing members,"[1] taking up Ophioglossaceæ. His object is "the following out of the probable methods of progression in the evolution of the more complex from the simpler types." The four methods given are septation, branching, reversion of vegetative parts to sporogenous condition, and eruption of appendicular organs from a previously smooth surface. The sporangiophores of Helminthostachys are cited as an example of the last.—S. C. S.

DR. J. E. HUMPHREY, of Johns Hopkins University, gives in the *Annals of Botany* for March, the results of a careful study of all available material on the seed development of the Scitamineæ. He finds "in the characteristic formation of the micropylar collar, in the persistence of the micropylar epidermis over the apex of the embryo-sac, in the very common development of a micropylar aril and in the direct development of the embryo, the features of the seed which are to be regarded as most characteristic of the Scitamineæ;" the genus *Canna* departs sufficiently from these characters to be made the type genus of a distinct family.—S. C. S.

THE *Proc. Philad. Acad.*, 1895, Part III, contains the following material of botanical interest: about 100 new species of fungi, including a new genus (*Stilbomyces*), by Ellis and Everhart; a series of corrections of Mr. W. E. Meehan's determination of his Greenland collection, by Theo. Holm; a second instalment of Professor E. L. Greene's "Eclogæ Botanicæ," in which he describes numerous new western plants and revises the genus *Tropidocarpum;* notes on the study of cross-fertilization of flowers by insects, by Ida A. Keller, which is simply a résumé of the subject, and in which we would suggest the substitution of "pollination" for "fertilization."

PROFESSOR STRASBURGER, in his *résumé* of recent work in vegetable cytology, discusses the behavior and function of the nucleolus during karyokinesis, and confirms the statements of other observers as to its frequent fragmentation and partial distribution in the cytoplasm at that period. He suggests that it provides the material for the construction of the achromatic spindle. This body he considers to consist of two parts, a central strand of unbroken fibers, which stretch from pole to pole, and along which the chromosomes slide, and an outer group of fibers, which end at the equator on the chromosomes themselves. These latter fibers are effective in conveying the daughter-chromosomes to their respectives poles.—*Jour. Roy. Micr. Soc.* (Feb.).

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[1] Unters. a. d. Gesammtgeb. d. Myk. Heft. XII, 1895.

[1] Proc. Roy. Soc. 59: —.

MR. GEORGE MASSEE, in *Kew Bulletin* (Jan.) describes and figures *Rosellinia radiciperda*, a new and very destructive root-fungus of New Zealand. It seems to be almost omnivorous in its ravages, attacking all common orchard trees, cabbages, potatoes, etc. It is most plentiful "on the skirts of the primeval forests and on fern lands adjoining where no cultivation has ever been resorted to. Whole crops of potatoes are destroyed on such lands, and on dry lands where native tree stumps remain it is very prevalent." It seems that fungus pests are far more dreaded in New Zealand than any ravages by insects. The new fungus resembles *Dematophora necatrix*, the form producing the root-disease well-known as "pourridié" in central and western Europe.

MR. WALTER DEANE has in preparation a flora of the extensive system of metropolitan parks in Boston and vicinity. It will make a volume of about 150 pages, of which more than half are already printed (Apr. 15). This system of parks, created by the Massachusetts legislature and under the control of a special commission, is the most extensive of any in the world. The Arnold Arboretum is included in the system. Several millions have already been expended in improving them, and the work, though only well begun, is being prosecuted with vigor. It is well to have an available flora of these districtss, and Mr. Deane's thorough acquaintance with the seed plants of the region fits him well for the task.

MR. D. T. MACDOUGAL has been studying the root-tubers of *Isopyrum biternatum* from a physiological standpoint, his results being published as a reprint (March 31) in the advance of the *Minn. Bot. Studies.* He finds that the tubers are formed by an excessive development of the pericycle; that the feeble mechanical elements in elongated tubers are compensated for by the habit of penetrating a loose substratum; that the product of photosyntax is probably cane-sugar, which finally accumulates in the tubers in the same form; that the tendency to form "red starch" is characteristic; that the tendency to form tubers is firmly fixed, resisting even in an apparently starving condition in water cultures; and that the sap of the external tissues contains a bitter substance, which may serve as protection against animals and fungi.

TWO RECENT CONTRIBUTIONS from Professor R. A. Harper in *Ber. d. deut. bot. Gesell.* present some of the results of his studies among the Ascomycetes. One contribution records observations on the development of the perithecium in *Sphærotheca Castagnei*, in which the author has succeeded in following the whole process of sex-reproduction, a result which goes far towards settling this disputed question among Ascomycetes. Branches develop from neighboring filaments, one of which produces an oogonium, the other an antheridium. The latter becomes curved and closely applied to the former; the walls at the point of contact are absorbed; and the two gametes fuse. The subsequent part played by the basal cell of the oogonium in the construction of the perithecium, and the development of the asci and their spores, are fully described. The other paper is a contribution to nuclear division and spore-formation in as ascus, *Peziza Stevensoniana* and *Ascobolus furfuraceus* having been used.

AT THE meeting of the Academy of Science of St. Louis, on March 16th, Dr. Wm. Trelease presented some of the results of a recent study of the poplars of North America, made by him for the Systematic Botany of North America, and exhibited specimens of the several species and recognized varieties. Specimens were also exhibited of an apparently undescribed poplar from the mountains of northern Mexico, which he proposed to characterize shortly, and, for comparison, specimens of the two other species of poplar known to occur in Mexico, and of the European allies of the supposed new species, were laid before the Academy. The paper was discussed by Drs. Green, Glatfelter, and Kinner, Mr. Winslow, and Professor Kinealy.

The Academy, in cooperation with the joint committee of the scientific societies of Washington, adopted resolutions favoring the appointment of a permanent chief for the scientific work of the United States Department of Agriculture.

S. NAWASCHIN is rapidly adding to the list of chalazogamic forms. In *Bot. Centralbl.* (63: 353) he gives an account of the discovery of chalazogamy in *Juglans regia*, which shows several peculiar features. The single ovule completely fills the ovary cavity, there being also a wing-like outgrowth on each side of the placenta. The pollen-tube does not even enter the stylar canal or any cavity whatsoever, but advances in intercellular fashion down the style and ovary wall until the placental outgrowths are reached, through which an intercellular passage is effected to the chalaza, through the nucellus, and so to the embryo-sac. The pollen-tube is said to branch freely, so that the tissue of the nucellus seems veined by tubes surrounding the embryo-sac on all sides. The author detected the male pronuclei within the embryo-sac, which he describes as wandering through the protoplasm of the embryo-sac until they meet and coalesce with one of the several free nuclei which function as oospheres but have not been differentiated into an "egg-apparatus."

THE FOLLOWING experiment station bulletins, recently published, pertain to vegetable pathology: Spraying experiments in 1895, by H. Garman (Ky., no. 59) gave favorable results with Bordeaux mixture on apples, and negative results with iron sulphate; Spraying orchards and vineyards, by J. C. Whitten (Mo., no. 31) reports favorable results with Bordeaux mixture; Experiments in the treatment of peach rot and of apple scab, by F. D. Chester (Del., no. 29) reports favorable results with several copper compounds; The smut of oats and its prevention, by Aug. D. Selby (Ohio, no. 64) gives a good general account of the disease, and favorable results with use of hot water and potassium sulphite; Treatment of some fungous diseases, by L. M. Underwood and F. S. Earle (Ala., no. 69) gives a general account of the most prominent plant diseases, and their treatment; Bacteriosis of carnations, by J. C. Arthur (Ind., no. 59) reports the results of an extended study of the disease, with methods of treatment; Field experiments with potatoes, by B. D. Halsted (N. J., no. 112) reports favorable treatment of potato scab and sweet potato rot with lime, sulphur, corrosive sublimate and sulphate of copper; Diseases of the potato, by E. G. Lodeman (Cornell, no. 113) treats of early and late blight, scab, and beetles. There are evidences of hasty preparation in this bulletin, and some errors of statement have crept in, for instance, the description of oospores in Phytophthora infestans, although no such structures have yet been discovered.